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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/748,690 | 12/22/2000 | Melis Anastasios | NREL 99-29 | 4270 |

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EXAMINER

AFREMOVA, VERA

ART UNIT PAPER NUMBER

1651

DATE MAILED: 12/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.
09/748,690

Applicant(s)
Melis Anastasios

Examiner
Vera Afremova

Art Unit
1651



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED Nov 4, 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid the abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

THE PERIOD FOR REPLY [check only a) or b)]

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☒ they raise the issue of new matter (see NOTE below);
- (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: see attached

3. ☐ Applicant's reply has overcome the following rejection(s):

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because:
see attached

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: none

Claim(s) objected to: none

Claim(s) rejected: 1-3, 5-8, and 10

Claim(s) withdrawn from consideration: none

8. ☐ The proposed drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

10. ☐ Other:

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Attachment to Advisory Action

The amendment filed 11/04/2002 under 37 CFR 1.116 in reply to the final rejection has been considered but is not deemed to place the application in condition for allowance and will not be entered because the proposed amendment raises new issues that would require further consideration and/or search. New issues are comprised by the numerous new limitations and newly proposed active steps of inducing reversible hydrogenase and measuring rates of cellular respiration and oxygen evolution in various samples incubated outside or separately from the primary algal culture growing under particular conditions are now proposed. Issues of new matter might also exist in the proposed claims regarding the substantial amount of amendments to the claimed invention.

Thus, the proposed amendment is not deemed to place the application in better form for appeal by materially simplifying the issues for appeal.

Response to Arguments

The claim rejection over the reference by Melis [IDS-2-1] is withdrawn in the light of affidavit under 37 CFR 1.1313 filed 11/04/2002. However, the removal of this reference does not change the core of claim rejection under 35 U.S.C. 103(a) as explained in the prior office action.

Applicant's arguments filed 11/04/2002 have been fully considered but they are not persuasive. The main applicants' argument is drawn to the idea of metabolic switch after removal of sulfur from the culture during next 15-30 hours (see response page 5, par. 1). Yet, the claimed

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method is not limited by any time intervals. Moreover, the claimed method does not clearly indicate how the selected nutrients including sulfur are removed from the growing culture system. For example: the method of the cited patent US 4,010,076 encompasses the use of "spent" culture wherein the nutrients including sulfur have been used for microbial grow and, thus, the method comprises a step of depleting nutrients within the scope of the claimed invention. The method for temporal separation of oxygen evolution and hydrogen production of the cited US 4,442,211 comprises step of growing algal culture and, thus, using/depleting nutrients including sulfur as required by the claimed invention, wherein the metabolic switch that is argued is an inherent mechanism of action under identical condition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (703) 308-9351. The examiner can normally be reached on Monday to Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The fax phone number for this Group is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Vera Afremova

Art Unit 1651

December 20, 2002.

Vera Afremova
IDENTIFIED
PRIMARY EXAMINER

Advisory Action

Application No.

09/748,690

Applicant(s)

ANASTASIOS ET AL.

Examiner

Vera Afremova

Art Unit

1651

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 31 March 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

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2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☒ they raise the issue of new matter (see Note below);
 - (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
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NOTE: See Continuation Sheet.

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8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____


VERA AFREMOVA PH.D.
PATENT EXAMINER

Continuation of 2. NOTE: New issues that require further consideration and search are newly introduced several and specific limitations drawn to the use of particular buffer medium, presence of DCMU, absence of selected nutrient(s), the use of white fluorescence illumination, the use of yellow actinic and blue actinic excitations of specific intensity, the use of specific oxidative respiration rate and oxygen production rate. The issue of new matter might also exist.

Continuation of 5. does NOT place the application in condition for allowance because: Arguments are mostly directed to the importance of metabolic switch in the algal culture after removal of sulfur from bioreactor. Yet, the claimed invention is not solely limited to the sulfur removal as argued but it encompasses manipulations with several selected nutrient(s) including sulfur, iron and manganese as well as Tris-acetate phosphate medium and DCMU. Further, it is unclear whether and how measuring parameters outside the main bioreactor (claim 1, steps c and d) would provide for the control of metabolic switch in respiration and oxygen production rates at the level as encompassed by the proposed amendments. It is uncertain and doubtful that the specific rates as presently claimed would necessarily result from a simple sulfur removal that is mostly argued and that the specific rates would not depend on the amounts of algal culture or other materials involved at least to some degree. Therefore, the criticality of newly introduced limitations is uncertain in order to establish novelty and/or to distinguish from the prior art.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. .

V.A.